WE CLAIM:

1. A spring-loaded heat sink assembly for a circuit assembly, comprising:

a) a heat sink having a base portion, a plurality of cooling fins, and an uppermost surface on said plurality of cooling fins;

b) at least one leaf spring positioned adjacent to said uppermost surface of said heat sink; and

c) a load plate positioned adjacent to said at least one leaf spring, said load plate comprising a plurality of elongate shafts fixedly attached thereto, said plurality of elongate shafts removably extending through said at least one leaf spring and said heat sink and at least partially through said circuit assembly, each of said plurality of elongate shafts comprising an open channel extending therethrough.

2. The spring-loaded heat sink assembly of claim 1 further comprising a plurality of fasteners extending through said open channel of said elongate shafts and at least partially through said circuit assembly, said plurality of fasteners removably connecting said spring-loaded heat sink assembly to said circuit assembly.

3. The spring-loaded heat sink assembly of claim 2, said at least one leaf spring comprising a plurality of elongate openings for receiving said plurality of fasteners when said at least one leaf spring is in an undeflected state.

4. The spring-loaded heat sink assembly of claim 1 wherein said plurality of elongate shafts are integrally formed with said load plate.

5. The spring-loaded heat sink assembly of claim 1 wherein each of said elongate shafts comprises a flared upper end portion and a lower

end portion, said open channel extending from said flared upper end portion to said lower end portion.

6. A spring-loaded heat sink assembly and circuit assembly, said circuit assembly having a printed circuit board, an electrical connector, and a land grid array-type device, comprising:

a) a heat sink having a base portion in thermal contact with said land grid array-type device and a plurality of cooling fins;

b) at least one leaf spring positioned adjacent to said cooling fins;

c) a load plate positioned adjacent to said at least one leaf spring;

d) a plurality of elongate shafts extending from said load plate to at least said land grid array-type device, said plurality of elongate shafts extending through said heat sink and said at least one leaf spring, each of said plurality of elongate shafts having an open channel extending therethrough;

e) a plurality of fasteners, each of said plurality of fasteners extending through said open channel in said plurality of elongate shafts, removably connecting said spring-loaded heat sink assembly to said circuit assembly.

7. The spring-loaded heat sink assembly of claim 6 wherein said circuit assembly further comprises an electromagnetic interference frame mounted on said printed circuit board and a backing plate, wherein:

a) said plurality of elongate shafts extend from said load plate to said electromagnetic interference frame; and

b) said plurality of fasteners extend through said electromagnetic interference frame and said printed circuit board and are removably attached to said backing plate.

8. The spring-loaded heat sink assembly of claim 6, said at least one leaf spring comprising a plurality of elongate openings for receiving said

plurality of fasteners when said at least one leaf spring is in an undeflected state.

9. The spring-loaded heat sink assembly of claim 6 wherein said plurality of elongate shafts are integrally formed with said load plate.

10. The spring-loaded heat sink assembly of claim 6 wherein each of said elongate shafts comprises a flared upper end portion and a lower end portion, said open channel extending from said flared upper end portion to said lower end portion.

11. An installation tool for attaching a spring-loaded heat sink assembly to a circuit assembly, comprising:

a) an upper portion, a first side portion, and a second side portion, said first side portion and said second side portion extending from and being separated from one another by said upper portion;

b) an attachment pin removably inserted through said first side portion and said second side portion;

c) a lower plate having an upper surface and a lower surface;

d) an actuation device extending through said upper portion and contacting said upper surface of said lower plate, said actuation device being adjustable in order to move said lower plate relative to said upper portion; and

e) at least one fastener movably connecting said lower plate to said upper portion.

12. The installation tool of claim 11, wherein:

a) said lower plate comprises flanges extending from the lower surface thereof; and

b) said upper portion comprises at least one opening having a constricted center portion having a diameter which is approximately equal to the diameter of said at least one fastener.

13. The installation tool of claim 11, wherein:

a) said actuation device is a threaded screw, rotation thereof causing said actuation device to be lowered or raised; and

b) said at least one fastener is a screw having a threaded lower portion connected to said lower plate and an unthreaded upper portion slidably connected to said upper portion.

14. A method for installing a spring-loaded heat sink assembly on a circuit assembly using an installation tool, said spring-loaded heat sink assembly comprising a heat sink, at least one leaf spring, and a load plate, said method comprising:

a) assembling said heat sink, said at least one leaf spring, and said load plate, thereby creating a heat sink assembly;

b) mounting said installation tool on said heat sink assembly;

c) lowering an actuation device on said installation tool in order to compress said at least one leaf spring;

d) positioning said heat sink assembly and attached installation tool on said circuit assembly; and

e) inserting fasteners through said heat sink assembly and at least partially through said circuit assembly in order to attach said heat sink assembly to said circuit assembly.

15. The method of claim 14 comprising the further step of, after the step of inserting fasteners, removing said attachment pin from said heat sink assembly and removing said installation tool from said heat sink assembly.

16. The method of claim 14 wherein the step of attaching an installation tool to said heat sink assembly is accomplished by positioning said installation tool over said heat sink assembly and inserting an attachment pin through said installation tool and said heat sink assembly.

17. The method of claim 14, said installation tool comprising a lower plate having an upper surface and a lower surface, wherein the step of lowering an actuation device on said installation tool in order to compress said at least one leaf spring is accomplished by lowering said actuation device to exert compressive force on said upper surface of said lower plate, said lower surface of said lower plate thereby exerting compressive force on said at least one leaf spring of said heat sink assembly.

18. A spring-loaded heat sink assembly for a circuit assembly, comprising:

a) means for removing heat from said circuit assembly;

b) biasing means for compressing said means for removing heat against said circuit assembly, said biasing means comprising at least one leaf spring;

c) a load plate positioned adjacent to said at least one leaf spring; and

d) means for separating said load plate from a heat sink of said spring-loaded heat sink assembly thereby creating a space between said load plate and said heat sink, said biasing means being positioned within said space.